REMARKS

Favorable reconsideration and allowance of this application are requested.

1. Discussion of Claim Amendments

By way of the amendment instructions above, the substance of original claims 4 and 6 have been incorporated into independent claim 1. As such, claims 4 and 6 have been cancelled as redundant. In addition, the elastomer component (B) has been clarified to be one of a polystyrene-series elastomer and/or a polyester-series elastomer as supported by paragraph numbers [0024] - [0031] of the originally filed specification.

Therefore, upon entry of this amendment, claims 1-3, 5, and 7-13 will remain pending in this application.

Obvious typographical errors in the specification have been corrected in paragraphs [0039] and [0043].

2. Examiner's Position

The Examiner asserts that claims 1-2, 4-5 and 7-13 are not novel (35 USC §102(b)) in the light of US 2003/0130381 (Joachimi et al). Further, the Examiner asserts that claim 3 is obvious (35 USC §103(a)) from Joachimi et al, US 2002/0190408 (Houston et al) and J. Appl. Polym. Sci., 1990, 39, 1251 (Halder et al). Claim 6 attracted a rejection under 35 USC §103(a) as allegedly obvious from Joachimi et al and US 2002/0188073 (Uno et al).

As will become evident form the discussion which follows, none of the applied references of record is appropriate against the presently pending claims herein.

3. Discussion of Applied References

(3-1) Joachimi et al: US 2003/0100381

Joachimi et al disclose:

"'A composition comprising:

A) 35 to 99.999 wt - % of a laser-transparent thermoplastic material

B) 0.001 to 0.1 wt. % of one or more IR-absorbing compound selected from the group comprising phthalocyanine, naphthalocyanine, perylene, quaterylene, metal complex, azo dye, anthraquinone, squaric acid derivative, immonium dye and polymethine,

C) 0 to70 wt. % of a mineral filler or reinforcing substance D) 0 to 30 wt. % of an additive,

wherein the total composition has a carbon black content of less than 0.1 wt. %" (claim 1).

Joachimi et al describe "Suitable as component A are polymers or copolymers, for example based on partially aromatic polyesters such as for example polyalkylene terephthalates, aromatic polyesters, polyamide, polycarbonate, polyacrylate, polymethacrylate, ABS graft polymers, polyolefins such as polyethylene or polypropylene, polystyrene, polyvinyl chloride, polyoxymethylene, polyimides, polyethers and polyether ketones, which may be used individually or as a blend of various polymers" (paragraph number [0033]). Further, "As Component D) the compositions according to the present invention may furthermore contain additives, such as, for example, flame retardants, stabilizers, pigments, processing auxiliaries such as for example lubricants, nucleating agents, rubber—elastic polymers, often also termed impact modifiers, elastomers or rubber, such as, for example, rubbers or

polyolefins, etc" (paragraph number [0115]). Furthermore, "As examples of plasticizers there may be mentioned phthalic acid dioctyl ester, phthalic acid dibenzyl ester, phthalic acid butylbenzyl ester, hydrocarbon oils and N- (n—butyl)—benzenesulfonamide" (paragraph number [0124]).

Regarding advantages of Joachimi et al, it is described therein that: "An object…is to provide natural-colored and pigmented laser—absorbing molding compositions for the production of molded parts having a high surface quality that can be reliably joined to laser—transparent molded parts by a laser beam process. Another object of the present invention is to provide a laser—absorbing material that is transparent or translucent in the visible region of the spectrum in layers up to 5 mm thick. A further object of the present invention, is to provide both molded parts that appear to the human eye to have a very similar optical appearance as regards color and surface quality" (paragraph number [0024]).

(3-2) Houston et al: US 2002/0190408

Houston et al disclose:

> "A method of locking in a desired morphology in a polymeric material, the method comprising the steps of:
> mixing together a dead polymer, a reactive plasticizer, and an initiator to form a polymerizable composition;
> processing said polymerizable composition to give a desired morphology of the polymeric constituents of said polymerizable composition;
> shaping said polymerizable composition into a desired geometry; and
> exposing said polymerizable composition to a source of polymerizing energy, to give a polymeric material

wherein said desired morphology is locked in place"
(claim 1)

Houston et al describe:

"'When the mixture refractive index is an especially important consideration, high refractive index polymers may be used as one or more of the dead-polymer components. Examples of such polymers include polycarbonates and halogenated and/or sulfonated polycarbonates, ... In general, increasing the aromatic content, the halogen content (especially bromine), and/or the sulfur content are effective means well known in the art for increasing the refractive index of a material. High index, low density, and resistance to impact are properties especially preferred for ophthalmic lenses as they enable the production of ultra thin, lightweight eyeglass lenses, which are desirable for low-profile appearances and comfort and safety of the wearer.

Alternatively, elastomers, thermosets (e.g., epoxies, melamines, acrylated epoxies, acrylated urethanes, etc., in their uncured state), and other non—thermoplastic polymeric compositions may be desirably utilized during the practice of this invention.

As discussed previously, mixtures of such materials may also be beneficially used to create morphologically stable parts with desirable properties. For example, impact modifiers (usually lightly crosslinked particles or linear polymer chains) may be blended into various thermoplastics or thermoplastic elastomers to improve the impact strength of the final cured resin. In such cases, the presence of the reactive plasticizers may facilitate blending by lowering the softening temperature of the polymers to be blended. This is especially advantageous when temperature—sensitive materials are being blended with high—g

polymers. When optically clear materials are desired, the mixture components (i.e., the dead polymers, the impact modifiers, and/or the reactive plasticizers) may be chosen to produce the same refractive index between the phases (iso—refractive) such that light scattering is reduced. When iso-refractive components are not available, the reactive plasticizers may nonetheless act as compatibilizers to help reduce the domain size between two immiscible polymers to below the wavelength of light, thus producing an optically clear polymer mixture that would otherwise have been opaque. The presence of reactive plasticizers may also in some cases improve the adhesion between the impact modifier and the dead polymer, improving the resultant mixture properties" (paragraph number [0052]—[0054].

Regarding advantages of Houston et al, there is described: "'The present invention is directed to a method for manipulating and controlling the phase—separation behavior, morphology, and molecular orientation in a wide variety of materials containing at least one polymeric component" (paragraph number [0006])

(3-3) Halder et al: J. Appl. Polym. Sci., 1990, 39, 1251

Halder et al disclose the morphology and the light scattering property of blends of poly(butylenes terephthalate) and bisphenol-A polycarbonate. Further, the blends having the Avrami exponent of 1.43-1.66 are described on Table II of page 1255.

(3-4) Uno et al: (us 2002/0188073)

Uno et al disclose:

"'A polyester type resin composition comprising

(A) 30 to 95 parts by weight of a polybutylene terephthalate type resin containing a polybutylene

terephthalate—isophthalate copolymer in which the content of an isophthalic acid ingredient to the entire dicarboxylic acid ingredient is 3 to 30 mol %,

(B) 1 to 30 parts by weight of a polycarbonate resin,

(C) 1 to 30 parts by weight of an elastomer and

(D) 3 to 60 parts by weight of a fibrous reinforcing material, wherein the total amount for (A)—(D) is 100 parts by weight." (claim 1)

Uno et al describe "0. 1 to 5 parts by weight of a silicone compound (E) is added and blended based on 100 parts by weight of the total amount for (A)-(D)"(claim 2). Further, "The ingredient (C) used in this invention can include olefin, butadiene, polyester, polyamide or silicone type elastomers, preferably olefin type elastomer among them, and more preferably, an ethylenic copolymer formed by copolymerizing ethylene and one or more of comonomers selected from a-olefin of 3 or more carbon atoms or α,β-unsaturated acid and an alkyl ester thereof" (paragraph number [0032]) . .Further, "In this invention, the alkali resistance can further be improved by adding and blending the silicone compound (E)" (paragraph number [0039]). Furthermore, Uno et al disclose:

> "The polyester type resin composition according to this invention is a resin composition excellent in the alkali resistance and the mechanical strength and is useful as molding products by insert molding of metals, car mounted components and molding products used being buried in cement while taking advantage of such characteristics. Specific applications for use can include car electronic equipment such as solenoid valves, sensors, engine control units and ignition coils, as well as building components for

example, cement joining jigs" (paragraph number 100533 [0054]).

Regarding advantages of Uno et al, there is described: "'This invention concerns a polyester type resin composition and a molding product thereof and, more in particular, it relates to a polyester resin composition excellent in chemical resistance, particularly, resistance to alkaline solutions and also excellent in mechanical strength, and a molding product formed by metal insert molding of the resin composition." (paragraph number [0001])

4. Patentability of the Present Invention over the Applied References

The applied references fail to disclose a combination for laser welding in the specific proportion of the polybutylene terephthalate-series resin, the specific elastomer, the polycarbonate-series resin and the specific plasticizer as is defined in the present applicants' claims.

Specifically, Joachimi, Houston and Halder et al each fails to disclose a polystyrene-series elastomer and/or a polyester-series elastomer. Further, Uno et al fails to disclose the aromatic polycarboxylic acid ester and/or the acrylic polymer. Therefore, the present invention is not anticipated by any of the applied references.

Nor is the present invention "obvious" over the applied references. In this regard, Joachimi et al discloses a resin component such as polybutylene terephthalate-series resin and the polycarbonate-series resin, and an additive such as an elastomer and a plasticizer. However, Joachimi et al fails to disclose a combination of the polybutylene terephthalate-series resin and the polycarbonate-series resin in addition to the specific ratio for both such resins. Joachimi et al also does not describe the amounts of the elastomer and the plasticizer, respectively. On the other hand, since the other references of record fail to disclose the laser welding, the references would not be easily combined with Joachimi et al.

Even if it is assumed that Joachimi et al was combined with other references of record, all of the elements of the present invention would not be predicted. That is, among the applied references, only Uno et al disclose both of a polyester type elastomer and an amount of the silicon compound. However, the polyester type elastomer in Uno et al is only exemplified as one elastomer among several elastomers. Additionally Uno et al describe that olefin type elastomer is preferred. And, although the silicon compound is sometimes usable as the plasticizer, the silicon compound of Uno et al is used as the additive for improvement of the alkali resistance. Uno et al fails to disclose the plasticizer comprising an aromatic polycarboxylic acid ester or the acrylic polymer. That is, Uno et al fail to teach or suggest both of the specific elastomer and the specific plasticizer for the laser welding. Therefore, the present invention would never be predicted from the applied references.

Unexpected advantages ensue from the present invention as compared to the applied references. In this regard, since the composition of Joachimi et al comprise a thermoplastic material and general additives, the molded product cannot be uniformly welded to a counterpart material. On the other hand, since the composition of Houston, Halder and Uno et al are obtained by typical molding procedures, such as compression molding or injection molding, the effects for the laser welding would never be predicted from such references. Even if the composition of the applied references is used in connection with a laser welding technique, the molded product could be uniformly welded to a counterpart material. That is, the composition of Houston et al comprises resin component and a reactive plasticizer, while the composition of Halder et al comprise only resin component. As a consequence, these compositions would not be uniformly blended. Furthermore, since an olefinic elastomer is used as the elastomer in Uno et al, laser weldability and welding strength cannot be improved.

On the contrary, according to the composition of the present invention, since a polybutylene terephthalate-series resin, a specific elastomer, a polycarbonate-series resin and a specific plasticizer are combined in specific defined proportions, the molded

product having a uniform transmittance over the entire molded product is obtained resulting in highly uniform weldability even when the PBT-series resin as a base. Thus the obtained molded product can be uniformly welded to a counterpart material with the use of a laser beam.

Withdrawal of all rejections of record is therefore in order.

5. Fee Authorization

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

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